

ABSTRACT OF THE DISCLOSURE

A wireless gateway architecture integrates support for a plurality of wireless standards and protocols. In accordance with the architecture of the invention, a wireless gateway includes a chassis with an interconnecting backplane for allowing the addition and removal of different modules as they are needed. Each system module (e.g. WAP accelerator, SMS module, Page module, Mobile IP module, TSL/WTSI Accelerator, Multimedia Accelerator) is a fully working product that supports one particular function. A common bearer module supports all wired network interfaces such as Ethernet, ATM, Frame Relay, ISDN and more, as well as all wireless protocols including GSM, GPRS, SMS, Paging and more. A common database stores user and system information. A central manager manages all system modules, communications among them, and regular health check-ups. According to an aspect of the invention, an embedded design for hardware processing of traffic between wireless hosts and origin servers includes a host-optimized adapter, a seamlessly integrated embedded operating system and several CPUs handling different WAP stack layer processing. Engines for processing requests corresponding to the different WAP stack layers are totally separated, and may each run on a respective individual CPU. All engines and control blocks can exchange request-related information through a common request queue. Each request is uniquely identified by an assigned request structure. All user data are stored and processed in the data memory block. According to a further aspect of the invention, a wireless gateway includes a dedicated WAP engine that offloads the WML encoding and decoding functions from the CPU. Incoming unencoded data from a wired network is buffered at the WAP engine and converted into binary form for transmission in the wireless data network via a wireless data interface. Incoming encoded data from the wireless data network is buffered at the WAP engine and converted into textual form for transmission in the wired network via the network interface.